

ICF Consulting / Laboratory Data Consultants

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MEMORANDUM

TO:

Nancy Riveland-Har

Remedial Project Manager Cleanup Section 4, SFD-7-4

THROUGH:

Rose Fong

ESAT Project Officer

Quality Assurance (QA) Office, PMD-3

FROM:

Doug Lindelof

Data Review and QA Document Review Task Manager Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028

Task Order No.: B01

Technical Direction No.: B0105128 Amendment 2

DATE:

August 7, 2002

SUBJECT:

Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:

Omega Chem OU-2

SITE ACCOUNT NO.: CERCLIS ID NO.:

09 BČ LA02

CASE NO.:

CAD042245001

30499

SDG NO.: LABORATORY: Y0GW6

ANALYSIS:

A4 Scientific, Inc.

Volatiles

SAMPLES:

20 Water Samples

COLLECTION DATE:

May 21, 22, 23, and 24, 2002

REVIEWER:

Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

Ray Flores, CLP PO USEPA Region 6 Steve Remaley, CLP PO USEPA Region 9

ESAT File

CLP PO: [] FYI

[X] Attention

[X] Action

SAMPLING ISSUES: [X] Yes

[] No

B0105128-1736/30499/Y0GW6V.wpd

Data Validation Report

Case No.:

30499

SDG No.: Y0GW6

Site: Laboratory: Omega Chem OU-2 A4 Scientific, Inc.

Reviewer:

Denise McCaffrey, ESAT/LDC

Date:

August 7, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:

Y0GN0, Y0GN1, Y0GN2, Y0GN3, Y0GN4, Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP0, Y0GP1, Y0GP2, Y0GP3, Y0GP4, Y0GP5, Y0GP6, Y0GP7,

Y0GP8, and Y0GW6

Concentration and Matrix:

Low Level Water

Analysis:

Volatiles OLC03.2

SOW: Collection Date:

May 21, 22, 23, and 24, 2002

Sample Receipt Date:

April 4 and May 22, 23, and 25, 2002

Extraction Date:

Not Applicable

Analysis Date:

May 31 and June 1, 2, 3, and 4, 2002

FIELD QC:

Trip Blanks (TB):

Y0GN1, Y0GN4, Y0GN9, and Y0GP4

Field Blanks (FB):

Not Provided

Equipment Blanks (EB):

Not Provided

Background Samples (BG): Not Provided

Field Duplicates (D1):

Y0GN5 and Y0GN6

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKEI:

Y0GN2, Y0GN3DL, Y0GN4, Y0GP0, Y0GP3,

Y0GN2MS, and Y0GN2MSD

VBLKEJ:

Y0GN0, Y0GN0DL, Y0GN1, and Y0GN3

VBLKEK:

Y0GN5, Y0GN5DL, Y0GN6, Y0GN6DL, Y0GN7,

Y0GN7DL, Y0GN8, Y0GN9, and Y0GP3DL

VBLK13:

Y0GP4, Y0GP5DL, Y0GP6DL, Y0GP7DL, and Y0GW6

VBLKEL:

Y0GP1, Y0GP1DL, Y0GP2, and Y0GP2DL

VBLKEM:

Y0GP5, Y0GP6, Y0GP7, and Y0GP8

VHBLK01 VBLKEN:

TABLES:

1A: Analytical Results with Qualifications

1B: Data Qualifier Definitions for Organic Data Review

2: Calibration Summary

MS- Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

Quantitation limits for several analytes in sample Y0GN6 are qualified as rejected (R) due to very low Deuterated Monitoring Compound (DMC) recoveries.

CLP PO ATTENTION:

- 1) Detected results for methylene chloride and acetone in several samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blanks.
- 2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.
- 3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to low DMC recoveries.

SAMPLING ISSUES:

Detected results for acetone are qualified as nondetected and estimated (U,J) due to contamination in trip blanks Y0GN1, Y0GN4, and Y0GN9.

ADDITIONAL COMMENTS:

Tentatively identified compounds (TICs) detected in the samples are reported on Form 1LCFs. Other than laboratory artifacts/contaminants (retention time = 6.5 minutes), TICs were detected in samples Y0GN2 and Y0GW6 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages;
- USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis, OLC03.2, December 2000; and

Acceptable/Comment

• USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, June 2001.

II. Validation Summary

| | - I To a possible | |
|--|-------------------|-----------|
| HOLDING TIMES GC/MS TUNE/GC PERFORMANCE | YES YES | |
| INITIAL CALIBRATIONS | NO | D, E |
| CONTINUING CALIBRATIONS | NO | D, F |
| LABORATORY BLANKS | NO | C |
| FIELD BLANKS | NO | C |
| DEUTERATED MONITORING COMPOUNDS (DMCs) | NO NO | A, G H |
| MATRIX SPIKE/DUPLICATES INTERNAL STANDARDS | YES | п |
| COMPOUND IDENTIFICATION | YES | |
| COMPOUND QUANTITATION | YES | B, J |
| SYSTEM PERFORMANCE | YES | * |
| FIELD DUPLICATE SAMPLE ANALYSIS B0105128-1736/30499/Y0GW6V.wpd | NO | l |

III. Validity and Comments

A. Quantitation limits for the following analytes are qualified as rejected due to very low DMC recoveries (<10%), and are flagged "R" in Table 1A.

{2-Butanone-d5}

Acetone and 2-butanone in sample Y0GN6

{Chloroform-d}

• Bromochloromethane in sample Y0GN6

DMC recoveries for the analytes listed above are shown below.

| Sample Sample | <u>DMC</u> | %Recovery | QC Limits |
|---------------|---------------|-----------|-----------|
| Y0GN6 | 2-Butanone-d5 | 2 | 42-171 |
| | Chloroform-d | 1 | 80-123 |

Since the results are nondetected, false negatives may exist.

Deuterated Monitoring Compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

- B. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.
 - All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- C. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged "U,J" in Table 1A.
 - Methylene chloride in samples Y0GN9, Y0GP3, Y0GN2MS, and Y0GN2MSD
 - Acetone in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN6, and Y0GN7

Methylene chloride was found in method blanks VBLKEI, VBLKEJ, VBLKEK, VBLKEM, and VBLKEN at concentrations of 0.6 μ g/L, 0.3 μ g/L, 0.4 μ g/L, 0.2 μ g/L, and 0.3 μ g/L, respectively. Acetone was found in trip blanks Y0GN1, Y0GN4, and Y0GN9 at concentrations of 6 μ g/L, 5 μ g/L, and 4 μ g/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Acetone concentrations detected in samples Y0GP1 and Y0GP3 are not qualified since they exceeded 10 times the amount in the associated trip blank (Y0GN9).

Methylene chloride has been commonly found as a contaminant in the field and in many laboratories. Although not detected in any of the associated blanks, the user should note that the methylene chloride detected in sample Y0GP4 may be an artifact.

Although toluene was detected in trip blanks Y0GN1, Y0GN4, Y0GN9, and Y0GP4 at concentrations of 0.3 μ g/L, 0.4 μ g/L, 0.4 μ g/L, and 0.3 μ g/L, respectively, no data are qualified because toluene was not detected in any of the samples associated with these blanks.

Although cis-1,3-dichloropropene was found in method blanks VBLKEI (0.4 μ g/L) and VBLKEN (0.4 μ g/L), 1,2,3-trichlorobenzene was found in method blanks VBLKEI (0.4 μ g/L) and VBLKEM (0.5 μ g/L), 1,2,4-trichlorobenzene was found in method blank VBLKEM (0.4 μ g/L), and trans-1,3-dichloropropene was found in method blank VBLKEN (0.3 μ g/L), no data are qualified because these analytes were not detected in any of the samples associated with the method blanks.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

- D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.
 - Acetone in all samples and blanks
 - 2-Butanone in samplesYOGN0, Y0GN1, Y0GN3, Y0GP1, Y0GP2, Y0GP5, Y0GP6, Y0GP7, and Y0GP8, storage blank VHBLK01, and method blanks VBLKEJ, VBLKEL, and VBLKEM

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on May 22, 2002 (Table 2). RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on May 31, June 1, 2, 3, 4, and 5, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

It should be noted that the results for acetone in sample Y0GN6 were previously rejected. Please refer to Comment A.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

- E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large relative standard deviations (RSDs) in the initial calibrations, and are flagged "J" in Table 1A.
 - Acetone, methyl acetate, styrene, isopropylbenzene, and 1,2-dibromo-3-chloropropane in samples Y0GP4 and Y0GW6 and method blank VBLK13
 - 1,2,3-trichlorobenzene in all samples and blanks

Percent RSDs exceeding the ≤30.0% validation criterion were observed for the analytes listed above in the initial calibrations performed on May 22 and 26, 2002 (Table 2).

The DMC 1,2-dichlorobenzene-d4 also had a RSD outside the ≤30.0% validation criterion in the initial calibration (Table 2). Quantitation of the analytes associated with this DMC may have been affected by the RSD out of QC limits. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

- F. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.
 - Benzene, 1,2-dichloropropane, and 2-hexanone in samples Y0GP4 and Y0GW6 and method blank VBLK13
 - 4-Methyl-2-pentanone in samples Y0GP4 and Y0GW6, storage blank VHBLK01, and method blanks VBLK13 and VBLKEN
 - 1,2,3-Trichlorobenzene in samples Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP4, Y0GP5, Y0GP6, Y0GP7, Y0GP8, and Y0GW6, storage blank VHBLK01, and method blanks VBLK13, VBLKEK, VBLKEM, and VBLKEN
 - Methyl tert-butyl ether in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP0, and Y0GP3, storage blank VHBLK01, and method blanks VBLKEI, VBLKEK, and VBLKEN
 - 1,2-Dibromoethane in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GP0, and Y0GP3 and method blank VBLKEI
 - 1,2-Dibromo-3-chloropropane in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GP0, Y0GP1, Y0GP2, Y0GP3, Y0GP5, Y0GP6, Y0GP7, and Y0GP8 and method blanks VBLKEI, VBLKEL, and VBLKEM
 - Cyclohexane in samples Y0GN0, Y0GN1, Y0GN3, Y0GP1 and Y0GP2 and method blanks VBLKEJ, and VBLKEL

- Tetrachloroethene in samples Y0GN5, Y0GN6, Y0GN7, Y0GN8, and Y0GN9 and method blank VBLKEK
- Chloromethane and acetone in samples Y0GP1 and Y0GP2 and method blank VBLKEL
- 2-Butanone in samples Y0GP1, Y0GP2, Y0GP5, Y0GP6, Y0GP7, and Y0GP8, storage blank VHBLK01, and method blanks VBLKEL, VBLKEM, and VBLKEN
- 1,2,4-Trichlorobenzene in samples Y0GP5, Y0GP6, Y0GP7, and Y0GP8 and method blank VBLKEM

Percent differences exceeding the $\pm 30.0\%$ validation criterion were observed for the analytes listed above in the continuing calibrations performed on May 31, June 1, 2, 3, 4, and 5, 2002 (Table 2).

The DMCs vinyl chloride-d3, chloroethane-d5, 1,1-dichloroethene-d2, benzene-d6, 1,2-dichloropropane-d6, toluene d8, and 2-hexanone-d5 also had %Ds outside the $\pm 30.0\%$ validation criterion in the continuing calibrations (Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the %Ds out of QC limits. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

G. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{Toluene-d8}

- Trichloroethene, toluene, tetrachloroethene, ethylbenzene, xylenes, styrene, and isppropylbenzene in sample Y0GW6
- {1,1-Dichloroethene-d2}
- Trans-1,2-dichloroethene and cis-1,2-dichloroethene in sample Y0GP2

{Chloroform-d}

- 1,1-Dichloroethane, bromochloromethane, and chloroform in samples Y0GP2 and Y0GP8
- 1,1-Dichloroethane and chloroform in sample Y0GN6

{1,2-Dichloroethane-d4}

• Trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, methyl acetate, methylene chloride, methyl-tert-butyl ether, 1,1,1-trichloroethane, carbon tetrachloride, and 1,2-dichloroethane in sample Y0GP8

{trans-1,3-Dichloropropene-d4}

• cis-1,3-Dichloropropene, trans-1,3-dichloropropene, and 1,1,2-trichloroethane in sample Y0GP8

DMC recoveries outside QC limits for the analytes listed above are shown below.

| Sample | <u>DMC</u> | %Recovery | QC Limits |
|--------|------------------------------|-----------|-----------|
| Y0GW6 | Toluene-d8 | 76 | 77-120 |
| Y0GN6 | Chloroform-d | 1 | 80-123 |
| Y0GP2 | 1,1-Dichloroethene-d2 | 64 | 65-130 |
| | Chloroform-d | 74 | 80-123 |
| Y0GP8 | Chloroform-d | 78 | 80-123 |
| | 1,2-Dichloroethane-d4 | 76 | 78-129 |
| | trans-1,3-Dichloropropene-d4 | 78 | 80-128 |

Detected results for the above listed analytes may be biased low. Where the results are nondetected, false negatives may exist.

H. The matrix spike duplicate recoveries and relative percent differences (RPDs) for several analytes in QC samples Y0GN2MS and Y0GN2MSD did not meet the criteria for accuracy and precision specified in the SOW. Percent recoveries and RPDs for these analytes are presented below.

| | Y0GN2MSD | | QC | Limits |
|--------------------|-----------|------------|------|-----------|
| <u>Analyte</u> | %Recovery | <u>RPD</u> | RPD | %Recovery |
| 1,1-Dichloroethene | 146 | | | 61-145 |
| Benzene | 144 | 13 | ≤11 | 76-127 |
| Trichloroethene | 132 | 16 | ≤14 | 71-120 |
| Toluene | 138 | | | 76-125 |
| Chlorobenzene | 138 | | **** | 75-130 |

Results obtained may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis. The effect on data quality is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

I. In the analysis of the field duplicate pairs, the following outliers were obtained for the analytes listed below.

| | YUGNO(DI) | YUGNO (DI) | |
|---------------------------------------|-----------------|-----------------|------------|
| <u>Analyte</u> | Conc. μ g/L | Conc. $\mu g/L$ | RPD (<25%) |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 1200 | 920 | 26 |
| Bromodichloromethane | 0.5U | 0.2L | N/A |

A relative percent differences (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample at below the CRQL but is nondetected (U) at the CRQL in the field duplicate sample. The effect on data quality is not known.

A RPD of 26% was obtained for 1,1,2-trichloro-1,2,2-trifluoroethane in the analysis of field duplicate pair Y0GN5 and Y0GN6. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, method defects, or poor sampling or analysis techniques.

J. Samples Y0GN0,Y0GP5, and Y0GP7 were analyzed at 5-fold, 10-fold, and 40-fold dilutions, respectively, due to the high levels of tetrachloroethene. Results for tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GN3 was analyzed at a 80-fold dilution due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0GN5 and Y0GN6 were analyzed at 100-fold dilutions due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, trichloroethene, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, trichloroethene, and tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GN7 was analyzed at a 10-fold dilution due to the high level of trichloroethene. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0GP1 and Y0GP3 were analyzed at 4-fold and 10-fold dilutions, respectively, due to the high levels of acetone. Results for acetone are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GP2 was analyzed at a 40-fold dilution due to the high levels of trichloroethene and tetrachloroethene. Results for trichloroethene and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

ANALYTICAL RESULTS Tier 3 Table 1A

Case No.: 30499 SDG No.: Y0GW6

Site: OMEGA RECOVERY SERV. Lab: A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

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GW202-MW07A-2001 GW202-MW03A-0042 GW202-MW04A-0047 GW202-MW07A-0041 GW202-MW04B-2002 GW202-MW04B-1075 GW202-MW04B-0075 Station Location Y0GN2 Y0GN3 Sample ID Y0GN0 Y0GN1 TB Y0GN4 TB Y0GN5 D1 YOGN6 D1 Collection Date 05/21/2002 05/21/2002 05/21/2002 05/21/2002 05/22/2002 05/22/2002 05/22/2002 Dilution Factor: 10 10 1.0 10 10 10 10 Val Com Result Val Com Result Val Com Result Vai Com Result Val Com Result Vai Com Result Val Volatile Compound Result Com Dichlorodifluoromethane 0.5U 0.5U 0.5U 0.5U 0.50 2 2 0.50 0.60 Chlorometarie 0.50 0.50 0.50 a.sta 0.50 Vinvt Chloride 0.50 0.5U 0.5U 0.5U 0.5U 0.5U 0.5U Bromomethane 0.50 dsü 0.50 b.6U 0.50 0.50 0.50 Chloroethane 0.50 0.5U 0.5U 0.5U 0.50 0.50 0.5U 100 ซ.รับ 0.5U 97 Trichioroficomethene 0.21 0.50 310 J B J 1.1-Dichloroethene 0.5U 0.5U 0.5U 180 0.50 1300 1100 d.5U 0.5Ü 290 0.50 1200 1,1,2-Trichloro-1,2,2-triffuoroethane 3 IJ 920 IJ D 6 J D 31U CD 5U 51 BD 5U JD ЗU R ACD Cerbon Disulfide 0.50 0.5U 0.5U 0.50 0.50 0.5U 0.50 0.5U 0.5U Methyl Acetate 0.5U 0.5U 0.5U 0.5U 0.5U 0.5Ü 0.50 0.5U 0.50 D.5U Q.5U 0.5U Methylene Chloride 0.5U 0.5U 0.5U trans-1,2-Dichloroethene 0.5U 0.50 8.0 0,8 0.5U Methyl terl-Buryl Ether Ď.5Ú 0.50 J F I 0.50 0.50 J F 4 JF 1 4 J F 1,1-Dichloroethane 0,5U 0.5U 0.5U 0.6 0.5U G 12 1 7 cis-1,2-Dichlomethene 0.50 0.50 0.50 12 12 5U 2-Butanone 5U D J D 5U 5U D 5U 5U 5U R J Α 0.5Ü 0.50 0.50 0.50 0.50 Bromochlommethane 0.5U 0.5U R Chloroform 0.4L J В 0.5U 0.5U 0.5U 120 120 J GJ 1,1,1-Trichioroethane . 0.50 0.5U 0.50 0.50 17 7 0.7 0.5U F Cyclohexane 0.5U F J 0.5U 0.5U 0.5U 0.5U 0.5U J Carbon Tetrachloride **0** 5U 0,50 0.5U 0.50 0.5U 0.31 0.31 Benzene 0.5U 0.5U 0.5U 0.5L В 0.5U 1,2-Dichloroethane 0.50 0.5U 0.5U 0.5U 0.50 0.5U 0.50 Trichloroethene 20 0.50 0.5U 440 0.5U 480 480 0.5U 0.50 Methylcyclohexane 0.50 0.5U 0.5U 0.5U 0.5U 0.5U 1,2-Dichloropropane 0.5U 0.50 0.5U 0.5U 0.5U 0.5U 0.5U Bromodichloromethane 0.5U 0.5U 0.5U 0.5U 0.5U 0.2L J BI cis-1,3-Dichloropropene 0.50 0.50 0.5U 0.5U 0.5U 0.5U 0.5U 5U 5U 4-Methyl-2-pentanone 5U 5U 5U 5U 5U 0.5U 0.3L J В 0.5U 0.5U J В 0.5U 0.5U Toluene 0.4L trans-1.3-Dichloropropene 0.5U 0.5U 0.50 0,5U 0.50 0.5U 0.5U 0.5U 0.5U 1,1,2-Trichloroethane 0.5U 0.50 0.50 0.8 0.6 Tetractionoethene 0.5U 950 47 J 900 J FJ l j 0.2L В 260 0,5U J FJ 5U 2-Hexanone 5U 5U 5U 5U 5U 5U 0.50 0.50 0.5Ü Dibromochioromethane 0.5Ú 0.5Ц 0.50 0.5U 1,2-Dibromoethane 0.5U 0.5U 0.5U F 0.5U 0.5U 0.5U 0.50

SDG No.: Y0GW6

Tier 3 Table 1A

Site: OMEGA RECOVERY SERV.
Lab: A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

| Station Location: | GW202-MW0 | 07A-004 | 1 | GW202-MW0 | 7A-200 | 1 | GW202-MW | 03A-004 | 2 | GW202- M W | 04A-004 | 7 | GW202-MW0 | 4B-200 | 2 | GW202-MW0 | 04B-1075 | 5 | GW202-MW | 04B-007 | 5 |
|-----------------------------|---------------|---------|-----|------------|--------|-----|--------------|---------|-----|-------------------|---------|-----|------------|--------|-----|--------------|----------|-----|-------------|---|-----|
| Sample ID: | Y0GN0 | | | Y0GN1 | TB | | Y0GN2 | | | Y0GN3 | | | Y0GN4 | TB | | Y0GN5 | D1 | | Y0GN6 | D1 | |
| Collection Date : | 05/21/2002 | | | 05/21/2002 | | | 05/21/2002 | | | 05/21/2002 | | | 05/22/2002 | | | 05/22/2002 | | | 05/22/2002 | | |
| Dilution Factor: | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Vai | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Vai | Com |
| Chlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5∪ | | |
| Ethyspenzena | ້ ເອີ້ | | | ថិនប | | | 050 | | | 0.50 | | | 0.50 | | | 0.5U | | | ປຣຸປ | | |
| Xylenes (total) | 0.5U |]] | | 0.5U | | | 0.5U |] . | | 0.5U |] |] | 0.5U | | | 0.5U | | | 0.5U | | |
| Styrene | ő. 3 0 | | | 0.51 | | | 0.5 Ŭ | | | 0.stJ | | | 0,5Ü | | | 0,50 | | | 0.5Ú | | |
| Bromoform | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | - | 0.5U | | , | 0.5U | | ., | 0.5U | | |
| (sopropylbenzene | 0.50 | | | 0.50 | | | 0.50 | | | 0.50 | | | 0.50 | | | 0.5Ü | | | 0.50 | | |
| 1,1,2,2-Tetrachloroethane | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5U | | |
| 1,3-Dichlorobenzene | đặu | | | 0.5U | | | 8.5 0 | | | ่ 6.5ป | | | 0.50 | | | dsu | | | U &0 | | |
| 1,4-Dichlorobenzene | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichlorobenzene | 6.5 0 | | | 0.5U | | | 0.50 | | | Ö,5Ü | | | ő.5Ü | | | ð,5 ü | | | 0.50 | | |
| 1,2-Dibromo-3-chloropropane | 0.5U | | | 0.5U | | | 0.5U | J | F | 0.5U | | | 0.5U | J | F | 0.5U | | | 0.5ป | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | |
| 1,2,4-Trichtorobenzene | 0,50 | | | å5Ú | | | 0.5Ü | | | 850 | | | 0.50 | | | 0.5Ü | | | 0.50 | | |
| 1.2.3-Trichlorobenzene | 0.5U | J | E | 0.5U | J | Ε | 0.5U | J | E | 0.5∪ | j | E | 0.5U | J | ΙE | 0.5∪ | J | EF | 0.5ป | J | EF |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Llmit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS Tier 3 Table 1A

Case No.: 30499 SDG No.: Y0GW6

Site: OMEGA RECOVERY SERV. Lab: A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

| | | | | CIADOD ARIA | | | 0141000 1114 | 221 200 | | 011700184 | | | 011000101 | | | Tourse serv | | | | | |
|---|---------------------------------------|-------------------------|----------------|----------------------------------|---------------------------|--|--------------------------------|--|----------------|----------------------|-----------------|------------|----------------------|--------------------|----------------------|-------------------------------|----------------------------|---------|----------------------|---------------------------|--------------------|
| Station Location : | GW202-MW | 040-009 | 4 | GW202-MW | 11A-004 | 5 | GW202-MW | | 3 | GW202-MW | 088-007 | U | GW202-MW | U8C-U08 | 7 | GW202-MW | OSA-004 | U | GW202-MW | 08D-011 | ö |
| Sample ID : | Y0GN7 | | | Y0GN8 | | | Y0GN9 | TB | | Y0GP0 | | | Y0GP1 | | | Y0GP2 | | | Y0GP3 | | |
| Collection Date : | 05/22/2002 | | | 05/22/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | |
| Dilution Factor: | 1.0 | | | 1.0 | | | 1.0 | | , | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Dichlorodifluoromethane Chloromethane | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | F | 0.5U 0.5U | | F | 0.5U 0.5U | | |
| Vinyl Chloride | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | gaumaa a | | 0.5U | | | 0.5U | | 900 TANSAN AN |
| Bromonielhane | 0.50 | | | 0.50 | | | Ó.BÚ | | | i) e j | | | 0.50 | | | 0.50 | | | 0.5Ü | | |
| Chloroethane | 0.5U | or overlaints beliefeld | 14004000000000 | 0.5U | Mederation is to be | pre 100.00 10.00 20.00 20.00 0 | 0.5U | | Olean, Strang. | 0.5U | 0 (el 1 1-1 1-1 | decembrica | 0.5U | Self-field and the | an constituentes | 0.5U | *1*1*101.00.00.00.00.00.00 | | 0.5U | total and Maria | an arterior |
| Trichtorofluoromethane 1.1-Dichloroethene | - 3 | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0,5U 3 | | | 0.5U 0.5U | | | 05Ú 4 | | | 0.5U 0.5U | | |
| 1,1,2-Trichloro-1,2,2-Influoroethene | . 2 9 | | | 0.30 | J. | В | 0.50 | | | 0.2L | J | В | 0.50 0.2L | j | В | 0.5U | | | 0,5U 0,5U | | |
| Acetone | 3U | J | CD | 5U | J | D | 4L | J | BD | 5U | J | D | 170 | J | DFJ | 5U | J | DF | 610 | J | DJ |
| Carbon Djaulfide | - 0.50 | | | Ua.o | | | 0.5U | | | 0,៦ប៉ | | | 0,50 | | | 0.50 | | | Ď. á jú | | |
| Methyl Acetate Methylene Chloride | 0.5U 0,5U | | | 0.5U 0.5U | | | 0.5U 0.5Ü | j. | C | 0.5U 0 .5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0 .5Ü | 7 | c |
| trans-1,2-Dichloroethene Methyl tert-Butyl Ether | 0.5U 0.5U | 1 | F | 0.5U 0.6 | J | F | 0.5U | j | F | 0.5U 0.5U | | F | 0.5U 0.5U | | | 0.2L 0.2L | j | BG B | 0.5U 0.5U | j | F |
| 1,1-Dichloroethane | 0.5U | endi - eksteri | | 0.5L | J | В | 0.5U | oliging generations. | | 0,5∪ | | | 0.5U | | | 0.5U | J Sociesticae | G | 0.5U | 5969878884 61664592816 | Konan America |
| cie-1,2-Dichloroethene 2-Butanone | 0.6 5U | | | 3 5U | | | 0.5 U | | | 1 | | | ¹ 2 5∪ | j | DF | ¹ 22 5U | j | G DF | 0,5U 5U | | |
| Bromochloromethane | 6.5U | | | 0.5U | | | กรับ | | | 0.5Ú | | | 0.50 | J | D | 0.5U | 3 | G | 050 | | |
| Chloroform | 0.9 | mente e cadale. | et colonomia e | 1 | edere te te babater ratio | i di santoni menta sela sela | 0.5U | S de contra consecuente de la contra consecuente de la contra consecuente de la contra contra contra contra co | Militar santus | 0.4L | J | В | 0.3L | J | В | 0.4L | J | BG | 0.5 | adada ususus sibabsa | acceptation to the |
| 1.1.1-Trichloroethane | 0.5U | | | 0.50 | | | 0,5U | | | 0.5U | | | 0.5U | | | 0,50 | | | 0,5U | | |
| Cyclohexane Carbon Tetrachioride | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | J | F | 0.5U 0.5U | J | F | 0,5U 0,5U | | |
| Benzene | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | L |
| 1.2-Dichloroethane | 0,5U 64 | | | 0,5U 2 | | | 0.5U 0.5U | | | 0.5U 2 | | | 0,5 U | | | 0.5U 96 | | | 0,5U 15 | | |
| Trichloroethene Methylcyclohexane | 0.5U | | J | 0,5U | | | 0.5U | | | 2 0,5U | | | 3 0,5U | | | 0.5U | | J | 0,5U | | |
| 1,2-Dichloropropane | 0.5U | | | 0.5U | | | 0.5U | | ara d | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromodichioromethane cis-1,3-Dichloropropene | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.2L 0.4L | J. | B B | 0.5U 0.5U | | |
| 4-Methyl-2-pentanone | 0.30 50 | | | 5Ú | | | 9.50 S 14 | | | 5U | | | 0.50 50 | | | 0.4L 0.9L | J | В | 0.30 51 | | |
| Toluene | 0.5U 0.5U | | | 0,5U 0.5U | | | 0.4L 0.5U | J | В | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0,5U | | |
| trans-1,3-Dichloropropena | and a secondary order or not be about | | | Secretary analysis are available | | | e executional process and sta- | | | 0.5U | | | | | | 2004-1-050-201-00-0-00-0-00-0 | | | 0.5U 0.5U | | |
| 1,1,2-Trichloroethane Tetrachioroethene | 0.5U 110 | ú | F | 0.5U g | 1 | F | 0.5U 0.5U | ŭ. | F | 0.5U 9 | | | 0.5U †1 | | | 0.5U 430 | | 4 | 0,7 | | |
| 2-Hexanone Dibromochloromethane | 5U 0.6U | | | 5U 0.5Ü | | | 5U 0.5U | | | 5U 0.5U | | | 5U 0.5U | | | 5U 0.6 | | | 5U 0.5U | | |
| 1,2-Dibromoethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | J | F | 0.5U | | The second of second | 0.5U | | | 0.5U | J | F |

SDG No.: Y0GW6

Tier 3 Table 1A

Site: OMEGA RECOVERY SERV. Lab: A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

| Station Location : | GW202-MW | 04C-009 | 4 | GW202-MW | 11A-004 | 5 | GW202-MW | 08A-200 | 3 | GW202-MW | 08B-007 | <u> </u> | GW202-MW | 08C-008 | 7 | GW202-MW | 08A-004 | 0 | GW202-MW | 08D-011 | 6 |
|-----------------------------|------------|---------|-----|------------|---------|-----|------------|---------|-----|------------|---------|----------|------------|---------|-----|------------|---------|-----|------------|---------|-----|
| Sample ID : | Y0GN7 | | | Y0GN8 | | | Y0GN9 | TB | | Y0GP0 | | | Y0GP1 | | | Y0GP2 | | | Y0GP3 | | |
| Collection Date: | 05/22/2002 | | | 05/22/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | | 05/23/2002 | | |
| Dilution Factor : | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Vai | Com |
| Chlorobenzene | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | 1 | 0.5U | | |
| Ethylbergene | 0.5Ц | | | 0.50 | | | 0.5Ú | | | 0.50 | | | 0.2 | 1 | В | ÖSÜ | | | 0.50 | | |
| Xylenes (total) | 0.5U | J J | •1 | 0.5U | | | 0.5U | | | 0.5∪ | | | 0.8 | | Į į | 0.5U | | 1 | 0.7 | | 1 |
| Styrene | 0.50 | | | 0.50 | | | 950 | | | 0.50 | | | ពី១៤ | | | 0.5U | | | 080 | | |
| Bromoform | 0.5U | | | 0.5U | 1 | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | 1 | 0.5U | | 1 |
| Isopropylbenzene | ດ.ສບ | | | 050 | | | 0.5U | | | 0.5U | | | 0.50 | | | 0.50 | | | 0.50 | | |
| 1,1,2,2-Tetrachloroethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,3-Dichlorobenzene | 0.5Ü | | | 0.50 | | | 0.5Ü | | | 0.50 | | | 0.5U | | | 0.50 | | | 0.50 | | |
| 1,4-Dichlorobenzene | 0.5U | i i | | 0.5U | 1 . 1 | | 0.5∪ | | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichlorobenzene | ង់នប់ | | | 0,50 | | | 0.5Ü | | | 0.5U | | | 0.5U | | | 0.50 | | | 0.5U | | |
| 1,2-Dibromo-3-chloropropane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | J | F | 0.5U | J | F | 0.5U | J | F | 0.5U | J | F |
| 1,2 A-Trichlorobenzene | 0.5U | | | 0,5U | | | 0.5U | | | 0.50 | | | 0.50 | | | 0.5U | | | نا0.5 | | |
| 1,2,3-Trichlorobenzene | 0.5U | J | EF | 0.5U | J | EF | 0.5U | J | EF | 0.5U | j | E | 0.5U | j | E | 0.5U | _ J | E | 0.5U | J | E |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Llmit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS Tier 3 Table 1A

Case No.: 30499 . SDG No.: Y0GW6

Site: OMEGA RECOVERY SERV.
Lab: A4 SCIENTIFIC, INC

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

QUALIFIED DATA
Concentration in ug/L

Analysis Type: Low Level Water Samples

For Volatiles

| Station Location : | GW202-MW | 004.200 | 1 | GW202-MW | 00A-003 | 2 | GW202-MW | 098-005 | <u>.</u> | GW202-MW | nga_nna | 2 | GW202-MW | 104-005 | 7 | , | | | GW202-MW | 134_004 | 2 |
|---|---------------------------|---------|---------------|-------------------|----------|----------|---------------------------|---------|--|---------------------------|---------|---------|------------------------|---------|-----------|--|-----|--------|---------------------------|---------|-----|
| Sample ID : | Y0GP4 | TB | • | Y0GP5 | 2011-000 | • | Y0GP6 | 000 000 | 7 | Y0GP7 | 00,1001 | - | Y0GP8 | 107-000 | • | YOGW6 | | PE | YOGN2MS | JUNGOT | _ |
| Collection Date : | 05/24/2002 | , 0 | | 05/24/2002 | | | 05/24/2002 | | | 05/24/2002 | | | 05/24/2002 | | | 100110 | | | 05/21/2002 | | |
| Dilution Factor: | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1 | | |
| | Result | Vai | O | Result | Val | C | Result | Val | Com | Result | Val | C | Result | Val | · · · · · | Result | Val | | 1.0 | Vai | |
| Volatile Compound Dichlorodifluoromethane | 0.5U | Val | Com | 0.5U | Vai | Com | Result 0.5U | Vai | Com | Result 0.5U | Vai | Com | Result 0.5U | Vai | Com | Result 7 | Val | Com | Result 0.5U | Vai | Com |
| Chorometharie | 0.50 0.50 | | | 0.50 850 | | | 0.50 0.50 | | | 6.BU | | | 0.50 | | | 0.50 | | | 0.5U | | |
| Vinyl Chloride Bromomettane | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 8.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 14 0,50 | | | 0.5U 0.5U | | |
| Chloroethane Trichogravoromethane | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.8U | | | 0.5U 0.5U | | | 0.5U ⁹ S | J. | G | 0.5U 0.5U | | | 0.5U 0.5U | | |
| 1,1-Dichloroethene 1,1/2-Trichloro-1,2,2-trifluoroethane | | | | 2 0.5U | | | 0.5U 0.3L | J | В | 4 0.6 | | | 4 6 | J | G G | 5 0.5U | | | 7 0.5U | | |
| Acetone Carbon Disuride | 5U 0.5U | J | DE ** | 5U 0,5U | J | D | 5U 0.5 U | J | D # | 5U 0.5U | J | D | 5U 0,5U | J | D | 5U 0.5U | J | DE | 35U 0,5U | J | CD |
| Methylene Chloride | 0.5U 0.2L | J | E B | 0.5U 0.5U | | | 0.5U 0 .5U | | | 0.5U 0.5U | | | 0.5U 0.5U | J | G G | 0.5U 0.5U | J | Е | 0.5U 3U | J | c |
| trans-1,2-Dichloroethene Methyl tert-Butyl Ether | 0.5U 0.5U | | | 0.5U | | | 0.5U 2 | | 100 (100 (100 (100 (100 (100 (100 (100 | 0.5U 0.5U | | В | 0.5U 0.5U | J | G | 2 0.5U | | | 0.5U | J | F |
| 1,1-Dichloroethane cis-1,2-Dichloroethene 2-Butanone | 0.5U 0.5U 5U | | | 0.5U 0.7 5U | .l | DF | 0.5U 0.5U 5U | | DF | 0.2L 0.3£ 5U | J | B DF | 0.2L 1 | j | BG DF | 2 0.5U 5U | | | 0.5U 0.5U 5U | | |
| Bromochloromethane Chloroform | 0.5U 0.5U | | | 0.5U 0.3L | , | В | 0.5U 0.3L | J | ur B | 0.5U | 7 | ב | 0.5Ü 0.4L | j J | G BG | 90 0.5U 8 | | | 0.5U 0.5U | | |
| 1,1,1-Trichiorpethane Cyclohexane | 0.5U | | | 0.5U 0.5U | • |) | 0.5U 0.5U | 3 | | 0.5U 0.5U | | | 0.5U 0.5U | 3 | G | 2 0.5U | | | 0.5U 0.5U | | |
| Carbon Tetrachionde Benzene | 0.5U | J | F | 0.5U 0.5U | | | b.5U 0.5U | | | 0.5U 0.5U | | | 0.5U | J | G | 0.5U 0.5U | J | F | 0,5U 6 | | Н |
| 1,2 Dichloroethane Trichloroethene | 0 .5U | | | 0.5U 7 | | | 0.5 U | | | 0.5U 4 | | | 0.5U 20 | J | G | 0.5U | 7 | G | 0.5U 6 | | Н |
| Methylcyclohexane 1,2-Dichloropropane | 0,5U 0.5U | J | F | 0,5U 0.5U | | | 0.5U 0.5U | | | 0,5U 0.5U | | | 0.5U 0.5U | | | 0.5U 7 | J | F | 0.5U . 0.5U | | |
| Bromodichioromethane cis-1,3-Dichloropropene | 0.5U 0.5U | | | 0,5U 0.5U | | | 0,5U 0.5U | | W. 787 | 0.5U 0.5U | | | 0,5U 0.5U | J | G | 4 0.5U | | | 0.5U 0.5U | | |
| 4-Methyl-2-pentanone Toluene | 5Ú 0.3L | J J | F B | 5U 0.5U | | | 5U 0.5U | | | 5U 0.5U | | | 5U 0,5U | | | 50 0.5U | j | F G | 5U 6 | | |
| trans-1,3-Dictiloropropene 1,1,2-Trichloroethane | 0.5Ú 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | J | G | 0.5U 0.5U | | | 0.5U 0.5U | | |
| Tetrachiorosthene 2-Hexanone | 0.5U 5U | j | F. | 89 5U | | J | 20 5U | | | 310 5U | | J | 16 5U | | | 4 5∪ | J | G F | 0,5U 5U | | |
| Dibromochloromethane 1,2-Dibromoethane | 0.5ป 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0,5U 0.5U | | | 12 7 | | | 0.5U 0.5U | J | F |

SDG No.: Y0GW6

Tier 3 Table 1A

Site: OMEGA RECOVERY SERV.

Lab : A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC Date: 08/07/2002

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

| Station Location : Sample ID : Collection Date : Dilution Factor : | GW202-MW0 Y0GP4 05/24/2002 1.0 | 9A-200- TB | 4 | GW202-MW Y0GP5 05/24/2002 1.0 | 09A-003 | 2 | GW202-MW Y0GP6 05/24/2002 1.0 | 09B-0054 | 4 | GW202-MW0 Y0GP7 05/24/2002 1.0 | 06A-004 | 2 | GW202-MW1 Y0GP8 05/24/2002 1.0 | IQA-005 | 7 | Y0GW8 | | PE | GW202-MW0 Y0GN2MS 05/21/2002 1.0 | 33A-0042 | 2 |
|---|---|---------------|-----|--|---------|-----|--|----------|--------|---|---------|--------|---|---------|----------|--------------|----------|---------|---|----------|-----|
| Volatile Compound | Result | Vai | Com | Result | Val | Com | Result | Val | Com | Resuit | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Chlorobenzene Emylpenzene | 0.5U 0 .5U | | | 0.5U 0.5 U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | (100 mm) | 25 0.6U | . | G | 6 0.5 U | | |
| Xylenes (total) Styrene | 0.5U 0.5U | J | ш | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0 .5U | | | 0.5U 0.5U | j | G EG | 0.5U 0.5U | | |
| Bromoform Isopropybenzene | 0.5U 0 .5U | J | E | 0.5U d.5U | | | 0.5U 0.5U | | | 0.5U ძ. ნ ს | | | 0.5U 0.5U | | | 21 0.5U | J | EG | 0.5U 0.5U | | |
| 1,1,2,2-Tetrachloroethane 1,3-Dichlorobenzene | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0 .5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0.5U | | |
| 1,4-Dichlorobenzene 1,2-Dichlorobenzene | 0.5U 6.5 U | | | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5U 0,2L | J | В | 0.5U 0.5U | | | 9 0.510 | | | 0.5U 0.5U | | |
| 1,2-Dibromo-3-chloropropane | 0.5U 0.5U | 7 | ш | 0.5U 0.5U | J | F | 0.5U 0.5U | J | F F | 0.5U 0.5 U | J | F F | 0.5U 0.5U | j | F F | 6 0,5U | J | E | 0.5U 0.5U | J | F |
| 1,2,3-Trichlorobenzene | 0.5U | J | EF | 0.5U | J | EF | 0.5U | J | EF | 0.5U | J | EF | 0.5∪ | J | EF | 0.5U | J | EF | 0.5U | J | E |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Llmit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS

Tier 3 Table 1A

Site: OMEGA RECOVERY SERV. Lab: A4 SCIENTIFIC, INC. SDG No.: Y0GW6

Reviewer: DENISE MCCAFFREY, ESAT/LDC

Date: 08/07/2002

Case No.: 30499

QUALIFIED DATA
Concentration in ug/L

Analysis Type: Low Level Water Samples

For Volatiles

GW202-MW03A-0042 Method Blank Method Blank Method Blank Station Location: Method Blank Method Blank Method Blank Y0GN2MSD **VBLKE VBLKEJ VBLKEK** VBLKEL VBLKEM **VBLKEN** Sample ID Collection Date: 05/21/2002 Dilution Factor: 1.0 10 10 1.0 1.0 1.0 Val Com Result Val Com Result Val Com Result Val Result Result Val Com Volatile Compound Result Com Val Com Result Val Com Dichlorodifluoromethane 0.5U 0.5U 0.50 0.5U 0.5U 0.5U 0.5U Chiloromethane 0.ธไป 0.50 0.50 0.50 0.50 0.50 0.50 F Vinvl Chloride 0.50 0.5U 0.50 0.50 0.50 0.50 0.5U Bromomethane a.sU 0.54 0.5 0.50 0.50 0.50 0.5Ú 0.5U 0.5U 0.50 0.50 0.50 Chloroethane 0.50 0.5U Trichloroftuoromethane 0.5U 0.5U 0.5U 0.50 0.5U 0.50 0.50 1.1-Dichlomethene н 0.5U 0.50 0.50 0.5U 0.5U 0.50 1,1,2-Trichloro-1,2,2-triffuoroethane 0.5U ő.su 0.5U 0.5U 0.50 0.5U 0.5U CD 5U DF Acetone 34U J D 5U Đ 5U D 5U 5U D 5U J D Carbon Disulfide 0.50 0.5U 0.5U 0.50 0.5U 0.50 0,50 Methyl Acetate 0.5U 0.50 0.5U 0.5U 0.50 0.5U 0.5U Methylene Chloride 30 u I c 0.6 0.3L J B 0.41 0.5U 0.2L J B 0.3L , В 8 0.5U trans-1.2-Dichloroethene 0.5U 0.5U 0.50 0.5U 0.5U 0.5U Methyl tert-Butyl Ether 0.50 0.5U u i F 0.50 0.5U 0.5U 0.5U J F 0.50 J u F l F 1,1-Dichloroethane 0.50 0.5U 0.50 0.5U 0.5U 0.5U 0.50 cis-1,2-Dichloroethene 0.50 0.54 0.5U 0.50 0.5U 0.5U 0.5U 2-Butanone 5U 5U 5U D 5U 5U DF 5U J DF 5U ı. F .1 Bromochioromethane 0.5U 0.511 ០ ស 0.5U 0.50 0.5U 0.50 Chloroform 0.50 0.5U 0.5U 0.50 0.5U 0.5U 0.5U 1,1,1 Trichloroethane 0.50 0.50 0.5U 0.50 0.50 0.5U 0.5U Cyclohexane 0.5U 0.5U 0.5U F 0.50 0.5U 0.5U 0.50 Carbon Tetrachlonde 0.5U 0.5U 0.5U 0.5L 0.5U 0.5U 0.5U 0.5U Benzene 7 Н 0.5U 0.5U 0.5U 0.5U 0.5U 1,2 Dichloroethane 0.5U 0.5U 0.50 0.5U 0.5U 0.5U 0.5U Trichloroethene 7 Н 0.5U 0.50 0.50 0.5U 0,50 0.5U 0.5U 0.5U 0.50 0.5U Methylcyclohexane 0.5U 0.5U 0.5U 0.5U 0.50 0.50 1,2-Dichloropropane 0.5U 0.5U 0.5U 0.5U Bromodichloromethane 0.5U 0.5U 0.5U 0.50 0.50 0.5U 0.5U cis-1,3-Dichloropropene В 0.5U 0.5U В 0.5U 0.4L J 0.5U 0.5U 0.4L J 5U 5U 5U 5U 4-Methyl-2-pentanone 5U 5U 5U J Toluene н 0.50 0.5U 0.5U 0.5U 0.5U 0.50 trans-1.3-Dichloropropene 0.5U 0.5U 0.5U 0.5U 0.5U 0.5U 0.31. В ij 1,1,2-Trichloroethane 0.5U 0.5U 0.5U 0.5U 0.5U 0.50 0.5U 0.5U 0.5U Tetrachloroethene 0.2L J В 0.5U 0.5U F 0.5U 0.5U 2-Hexanone 5U 5U 5U 5U 5U 5U 5U Dibromochloromethane 0,50 0.5U 0.5U 0.50 0.5U 0.5Ú 0.5U 1.2-Dibromoethane 0.5U F 0.5U 0.50 0.50 0.5U 0.5U

SDG No.: Y0GW6

Tier 3 Table 1A

Site . OMEGA RECOVERY SERV.

Lab: A4 SCIENTIFIC, INC.

Reviewer: DENISE MCCAFFREY, ESAT/LDC

QUALIFIED DATA

Analysis Type: Low Level Water Samples

Date: 08/07/2002

Concentration in ug/L

For Volatiles

| Station Location : | GW202-MW | 03A-004 | 2 | Method Blan | k | | Method Blank | k | | Method Blan | k | - |
|-----------------------------|------------|---------|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|-------------|-----|-----|--------------|-----|-----|-------------|-----|-----|
| Sample ID : | Y0GN2MSD | | | VBLKEI | | | VBLKEJ | | | VBLKEK | | | VBLKEL | | | VBLKEM | | | VBLKEN | | |
| Collection Date : | 05/21/2002 | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor: | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Chlorobenzene | 7 | | Н | 0.5∪ | | | 0.5U | | | 0.5Ų | | | 0.5U | - | | 0.5U | | | 0.5U | | Г |
| Elityfbenzene | 050 | | | ísti | | | Q5 U | | | రీమే | | | 050 | | | 0.50 | | | 0.5Ü | | |
| Xylenes (total) | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.50 | | | 0.5U | | | 0.5U | | 1 |
| Sfyrexie | 0.50 | | | o,au | | | 0.5Ü | | | 0.50 | | | 0.50 | | | 0,50 | | | 0.50 | | |
| Bromoform | 0.5∪ | | | 0.5∪ | | | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Isopropytienzene | 0.50 | | | u.k.p | | | 0.60 | | | ចិ.5ម | | | 0.50 | | | 0.54 | | | 0.50 | | |
| 1,1,2,2-Tetrachloroethane | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5U | | | 0.5U | | 1 |
| 1,3-Dichlorobenzene | dšu | | | 0.50 | | | 0,5U | | | 0,50 | | | 0.50 | | | 0.5Ü | | | 0.50 | | |
| 1,4-Dichlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5∪ | | | 0.5U | | | 0.5∪ | | | 0.5U | | i |
| 1,2-Dichlorobenzene | 0,50 | | | 0,50 | | | 0,5Ŭ | | | 0.50 | | | dau | | | 0.50 | | | 0.50 | | |
| 1,2-Dibromo-3-chloropropane | 0.5∪ | J | F | 0.5U | J | F | 0.50 | 1 1 | | 0.5ป | | | 0.5U | J | F | 0.5U | J | F | 0.5U | | |
| 1,2,4-Trichlombenzene | 0.50 | | | 0.50 | | | 0.5U | | | 0,5U | | | 0.50 | | | 0.4L | J | 町 | Ö.Bü | | |
| 1.2.3-Trichlorobenzene | 0.5U | ا ز | E | 0.4L | J | BE | 0.5U | j | E | 0.5∪ | J | EF | 0.5∪ | J | E | 0.5L | J | BEF | 0.5U | | EF |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

Case No.: 30499 SDG No : YOGW6 ANALYTICAL RESULTS Site: OMEGA RECOVERY SERV. Lab : A4 SCIENTIFIC, INC. Tier 3 Table 1A Reviewer: DENISE MCCAFFREY, ESAT/LDC Page 9 of 10

Date: 08/07/2002 QUALIFIED DATA Concentration in ug/L

| 21.0 | | | | | | QUALIFIED DATA | | |
|---|--|--|--|------------------------------------|--|--|--|--|
| Station Location: | 1: Method Bla | lank . | | | ر | Concentration in ug/L | Analysis Type | : Low Level Water Samples |
| Sample ID : | 1 VOLVA | 2016 | Storage Bla | iank | T | - 'B- | | Low Level Water Samples |
| Collection Date: | : | | VHBLK01 | | | | | For Volatiles |
| Dilution Costs | | | ı | | CRQL | -1 / | | |
| Volatile Compound | | | 1.0 | | 1 | 1 , | 1 | |
| Dichlemdiffuerense | Result | Val Con | | | 1 | 1 , | 1 | 1 |
| Chicromethane | 0.5U | U John | | Val Com | Result Val Com | | 1 | 1 |
| Virtyl Chlorida | 0.58 | Grand Common Com | 0.5U 0.5i/s | ,, , , | 0.5 Val Com | m Result Val Com | J | (|
| Viryi Chioride Bromomethane | 0.5U | 6-14 (4) 100 (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) | a constitution of the second | | Distance to U.S. | n Result Val Com F | Result Val Com | |
| Bromometiane | 0.5U | | 0.5U | | 0.5 | A Noision and American American | , | Com Recut |
| Chloroethane | | | 0.50 | Barrell I | 0.5 | | | Som Result Val C |
| Trichjorofluoromethane | 0.5U | | 0.5U | | 0.5 | | A series a manufacturate and a series of the | ACCUMENTATION OF THE STATE OF T |
| 1,1-Dichloroethona | 0.50 | | 0.50 | Alectrocholo pour Livrage. | 0.5 | | | |
| 1,1,2-Trichloro-1,2,2-hilliuoroethane | 0.50 | internal control | 0.50 | | 0.5 | State of Commencer and the Com | | A THE STATE OF THE |
| ectorie | 0.50 | | 0.5U | the management of the second | 0.5 | | Alikalikangutan kananasa kanasa a | |
| Cierbon Disulficie | 5U |) DE | | | BBT BB are region as well as a | A control of the cont | | |
| Methyl Acetate | 0.50 | J DE | 3U | JD | ************************************** | | Manada again as an | |
| | 0.5U | | and the second s | | 5 | · · · · · · · · · · · · · · · · · · · | | |
| lethylene Chloride | 0.5U | JE | 0.5U | THE PERSON NAMED IN POSTULA | 0.5 | BRIGGIONICO CONTRACTOR DE LA CONTRACTOR DE | | |
| ans-1.2-Dichlora-u | No. 10 845 MATERIA | | 0.5Ú | C SSSS Congress Con- | 0.5 | | | |
| ethyl tent-Blum End | 0.5U | . 1 T | 0.511 | | 0,5 | MGC Britania description | | |
| | đ ạ u . | | Half - Halfatting a come of the | | 0.5 | | Cidilottic march manager | |
| -1.2 Dichlomethana | 0.5U | III | 0.5U | 4 F | SSI IS 1954 or areas | Anno Court and an | | A SE TE TENTO DE LE CONTROL DE LA CONTROL DE |
| | 0.50 | | | | 0.5 | | ANGER PRESIDENT STREET, CALL TO LANGUAGE | |
| procedurementarie | 5U | AND DESIGNATION AND SECTION AND SECTION AND SECTION ASSESSMENT OF | 0.50 | | ÉELABORE LABORATE. | | | AND THE RESERVE OF THE PROPERTY OF THE PROPERT |
| | 0.50 | | 5U J | J DF | | | Not the state of | |
| | 0.5U | | 0.50 | | 5 n - | | | A. T. T. M. B. S. |
| 1-Trichloroethane | 0.50 | Total and an analysis of | 0.50 | 47.7 BERTALINGS BERTALINGS | 0,5 | P 1909 market management | | |
| runexane | - CONTRACTOR - CON | | 0.5U | | 0.5 | | | |
| on Tetrachloride | 0.50 | | 0.5U | | 0,5 | 1 1 1 | | |
| Zene | 0.5U | | 0.511 | s line in continue a continue | 0.5 | | | |
| Dichloroethene | 0.5ປ ປ | J F | 0.5U | | | RAMINGROUP CHESTON | | |
| loroethene | 050 | | | | 0.5 | | Silvinosporos | |
| Victorials | 0.50 | | 0.5µ | | 0.5 | and the second s | | The state of the s |
| rrencontane ichloropropane | Q5U | Attilition on Justinia | 0.5U | 1 | 0.5 | | The second residence of the | |
| | 0.50 | | 0,50 | | A Company of the Comp | I I among a property of the second se | | |
| | 0.50 | F | 0.5U | | 0.5 | | | |
| | 0.5U | | 0.50 | | | | | Giller Paramericano |
| IVI-2-nontonar | 100 January | alama, L. | 0.50 | | 0.5 | Add Halis Dichester marchine | | |
| e · · · · · · · · · · · · · · · · · · · | A 148 THE R. P. LEWIS CO., LANSING P. | F | 5U , | and the second of the second of | 0.5 | | | |
| TURINOPPHENONA I | 0.5U | 1 1 | ù.5U | 2 1 100000000 | 5 | | | AND THE PROPERTY OF THE PROPER |
| richlomosh | D.5U | | 0.50 | | 0.5 | | ateritätä täineen erivasta siinna oli ova kannaisi siinna. | |
| Oroninana U. | 0.5U | or or red and 1991, 1991, 19 | · · · · · · · · · · · · · · · · · · · | | 0.5 | The second and the second seco | | digitalista in analysissas suresissas |
| ione U. | 0.5d | | 0.50 | 1 100 100 | 0.5 | | tod pel-liga consequent | |
| ione | 5U J | F | 0.50 | 0,5 | ACCOMPONICAL ACCOMP | | | Apply Applications and the second |
| Aloromethane 0 | int engls. | la 100 de la come de l | 5U | | ** | | see consisted national control of | |
| Omoethane 0.5 | | | 0.50 | 新於 新聞歌歌 開發 一 時初時,1945年7月1日。 | 3 1 1 1 | | | the second of th |
| | 70 | | 0.5U | and the resemble of the first | | distina managan a managan a | | |
| | | | | 0.5 | and so have the difficulty | | Allegolani manani manani m | |
| | | | | | | The second distance of | | |
| | | | | | | | | |
| | | | | | | | | |

Date: 08/07/2002

SDG No .: Y0GW6

Tier 3 Table 1A

Site: OMEGA RECOVERY SERV.

Lab: A4 SCIENTIFIC, INC

Reviewer: DENISE MCCAFFREY, ESAT/LDC

QUALIFIED DATA Concentration in ug/L Analysis Type: Low Level Water Samples

For Volatiles

| Station Location : | Method Blant | k | | Storage Blan | k | | | | | | | | | | | | | | | | |
|---|-----------------------|-----|-----|----------------------|-----|-----|------------|-----|-----|--------|---|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Sample ID : | VBLK13 | | | VHBLK01 | | | CRQL | | | | | | | | | | | | | | |
| Collection Date : | l | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor : | 1.0 | | | 1.0 | | | | | | | | | | | | | | | | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Vai | Com |
| Chlorobenzene Ethybenzene | 0.5U 0.5 U | | | 0.5U 0.5U | | | 0.5 0.5 | | | 1000 | | | | | | | | | | | |
| Xylenes (total) Styrene | 0.5U 0.5U | J | E | 0.5U 0.5U | | | 0.5 0.5 | | | | | | | | | | | | | | |
| Bromoform isopropylbenzene | 0.5U 0.5U | J | E | 0,5U 0 ,5U | | | 0.5 0.5 | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrach(oroethane 1,3-Dichlorobenzene | 0.5U 0.5U | | | 0.5U 0.5U | | | 0.5 0.5 | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene 1,2-Dichlorobenzene | 0.5U p. 5 U | | | 0.5U 0.5U | | | 0.5 0.5 | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobanzene | 0.5U 0.5U | J | E | 0.5U 0.5U | | | 0.5 0.5 | | | | 701743 201743 201743 201743 201743 201743 201743 201743 201743 201743 201743 20174 2 | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.5U | J | EF | 0.5U | J | EF | 0.5 | | | | | | | | | | | | | | l |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Llmit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

- U The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 2 Calibration Summary

Case No.:

Site:

Laboratory:

Reviewer:

30499 SDG No.: Y0GW6 Omega Chem OU-2 A4 Scientific, Inc. Denise McCaffrey, ESAT/LDC August 7, 2002

Date:

RELATIVE RESPONSE FACTORS

| Analysis Date: Analysis Time: GC/MS I.D.: Analyte | RRF 05/22/02 0909-1158 C-5973 <u>Init.</u> | RRF 05/26/02 1129-1505 E-5973 Init. | RRF 06/03/02 0937 C-5973 Cont. | RRF 05/31/02 1240 E-5973 Cont. | RRF 06/01/02 1429 E-5973 Cont. | RRF 06/02/02 1117 E-5973 Cont. | RRF 06/03/02 1135 E-5973 Cont. |
|--|--|--|--|--|--|--|--|
| Acetone | 0.046 | | *** | 0.041 | 0.037 | 0.036 | 0.033 |
| Methyl Acetate | 0.041 | | | | 0.047 | 0.049 | 0.041 |
| 2-Butanone | 0.041 | | | | 0.047 | | 0.041 |
| 2-Butanone-d5 | 0.029 | 0.038 | 0.036 | 0.037 | 0.032 | 0.036 | 0.032 |
| 2-Hexanone-d5 | 0.025 | 0.046 | 0.025 | 0.035 | 0.040 | 0.037 | 0.033 |
| Analysis Date: Analysis Time: GC/MS I.D.: Analyte Acetone 2-Butanone 2-Butanone-d5 2-Hexanone-d5 | RRF 06/04/02 E-5973 Cont. 0.036 0.037 0.030 0.033 | RRF 06/05/02 E-5973 Cont. 0.035 0.039 0.028 0.024 | | | | | |

PERCENT RELATIVE STANDARD DEVIATIONS

| | %RSD | %RSD |
|-----------------------------|--------------|--------------|
| Analysis Date: | 05/22/02 | 05/26/02 |
| Analysis Time: | 0909-1158 | 1129-1505 |
| GC/MS I.D.: | C-5973 | E-5973 |
| Analyte | <u>Init.</u> | <u>Init.</u> |
| Acetone | 35.7 | |
| Methyl Acetate | 31.4 | |
| Styrene | 37.0 | |
| Isopropylbenzene | 40.1 | |
| 1,2-Dibromo-3-chloropropane | 43.4 | |
| 1,2,3-Trichlorobenzene | 39.0 | 39.7 |
| 1,2-Dichlorobenzene-d4 | 32.1 | |
| | | |

Table 2 Calibration Summary

PERCENT DIFFERENCES

| | %D | %D | %D | %D | %D |
|-----------------------------|-----------------|-------------------|----------|----------|-------------|
| Analysis Date: | 06//03/02 | 05/31/02 | 06/01/02 | 06/02/02 | 06/03/02 |
| Analysis Time: | 0937 | 1240 | 1429 | 1117 | 1135 |
| GC/MS I.D.: | C-5973 | E-5973 | E-5973 | E-5973 | E-5973 |
| <u>Analyte</u> | Cont. | Cont. | Cont. | Cont. | Cont. |
| Chloromethane | | | | | +41.7 |
| Acetone | W | | | | -34.0 |
| Methyl tert-butyl ether | are his der ted | -35.0 | | -30.2 | |
| 2-Butanone | | and task and fast | | 24 M W W | -30.5 |
| Cyclohexane | | | +33.3 | | +35.0 |
| Benzene | +35.2 | | | | |
| 1,2-Dichloropropane | +31.3 | | | | |
| 4-Methyl-2-pentanone | +33.6 | | | | |
| Tetrachloroethene | | | | +56.0 | |
| 2-Hexanone | +37.3 | | | | |
| 1,2-Dibromoethane | | -33.0 | | | |
| 1,2-Dibromo-3-chloropropane | | -37.0 | | | -30.3 |
| 1,2,3-Trichlorobenzene | -32.3 | | | -31.9 | |
| Vinyl Chloride-d3 | +87.8 | +137.3 | +105.6 | +115.5 | ± 178.5 |
| Chloroethane-d5 | +69.0 | +45.5 | +41.1 | +37.3 | +82.8 |
| 1,1-Dichloroethene-d2 | | | | | +39.8 |
| Benzene-d6 | +32.7 | W1 100 100 100 | | +32.1 | +61.7 |
| 1,2-Dichloropropane-d6 | +32.2 | | | | +37.0 |
| Toluene-d8 | | | | | +50.1 |
| | | | | | |
| | %D | %D | | | |
| Analysis Date: | 06//04/02 | 06/05/02 | | | |
| Analysis Time: | 0945 | 1015 | | | |
| GC/MS I.D.: | C-5973 | E-5973 | | | |
| Analyte | Cont. | Cont. | | | |
| Methyl tert-butyl ether | | -32.8 | | | |
| 2-Butanone | -37.3 | -33.9 | | | |
| 4-Methyl-2-pentanone | | -31.3 | | | |
| 1,2-Dibromo-3-chloropropane | -33.3 | | | | |
| 1,2,4-Trichlorobenzene | -32.1 | | | | |
| 1,2,3-Trichlorobenzene | -37.4 | -34.6 | | | |
| Vinyl Chloride-d3 | +106.0 | +112.9 | | | |
| Chloroethane-d5 | +44.5 | +40.7 | | | • |
| Benzene-d6 | +62.1 | +42.1 | | | |
| 1,2-Dichloropropane-d6 | +35.3 | | | | |
| Toluene-d8 | +53.1 | +32.9 | | | |
| 2-Hexanone-d5 | . 55.1 | -47.8 | | | |
| 2-HOXAHOHO-UJ | | 17.0 | | | |

^{- =} biased low; + = biased high

Table 2 Calibration Summary

ASSOCIATED SAMPLES AND METHOD BLANKS

Y0GP4, Y0GP5DL, Y0GP6DL, Y0GP7DL, Y0GW6, and method blank Init. 05/22/02:

VBLK13

Init. 05/26/02:

Y0GN0, Y0GN0DL, Y0GN1, Y0GN2, Y0GN3, Y0GN3DL, Y0GN4, Y0GN5, Y0GN5DL, Y0GN6, Y0GN6DL, Y0GN7, Y0GN7DL, Y0GN8, Y0GN9, Y0GP0, Y0GP1, Y0GP1DLL, Y0GP2, Y0GP2DL, Y0GP3, Y0GP3DL, Y0GP5, T0GP6, Y0GP7, Y0GP8, Y0GN2MS, Y0GN2MSD,

storage blank VHBLK01, and method blanks VBLKEI, VBLKEJ,

VBLKEK, VBLKEL, VBLKEM, and VBLKEN

Y0GP4, Y0GP5DL, Y0GP6DL, Y0GP7DL, Y0GW6, and method blank Cont. 06/03/02 (C-5973):

VBLK13

Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN3DL, Y0GN4, Y0GP0, Y0GP3, Cont. 05/31/02:

and method blank VBLKEI

Cont. 06/01/02:

Y0GN0, Y0GN0DL, Y0GN1, Y0GN3, and method blank VBLKEJ Y0GN5, Y0GN5DL, Y0GN6, Y0GN6DL, Y0GN7, Y0GN7DL, Y0GN8, Y0GN9, Y0GP3DL, and method blank VBLKEK Cont. 06/02/02:

Y0GP1, Y0GP1DL, Y0GP2, Y0GP2DL, and method blank VBLKEL Y0GP5, Y0GP6, Y0GP7, Y0GP8, and method blank VBLKEM Cont. 06/03/02 (E-5973):

Cont. 06/04/02:

storage blank VHBLK01 and method blank VBLKEN Cont. 06/05/02:

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LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS

DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS EPA SAMPLE NO.

Y0GN2

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 30499 Client No.: SDG No.: YOGW6

Lab Sample ID: 1626.003

Date Received: 05/22/2002

Lab File ID: E0172

Date Analyzed: 05/31/2002

Purge Volume: 25 (ML)

Dilution Factor: 1.0

GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)

Number TICs found: 2

| T | | | | EST. CONC. | |
|----|------------|---------------|------|------------|---|
| | CAS NUMBER | COMPOUND NAME | RT | (UG/L) | Q |
| 01 | | UNKNOWN | 3.93 | 0.62 | J |
| 02 | | UNKNOWN | 6.46 | 1.9 | J |
| 03 | | | | | |
| 04 | | | | | |
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| 30 | 4.4 | | | | |

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LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS EPA SAMPLE NO.

DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

YOGW6

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 30499 Client No.:

SDG No.: YOGW6

Lab Sample ID: 1622.002

Date Received: 05/21/2002

Lab File ID: C5645

Date Analyzed: 06/03/2002

Purge Volume: 25 (ML)

Dilution Factor: 1.0

GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)

Number TICs found: 1

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (UG/L) | Q |
|----|------------|---------------|----------|-------------------|---|
| 01 | | UNKNOWN | 5.90 | 23 | J |
| 02 | | | <u> </u> | | |
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